[11150/76]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Examiner: Regina Liang
Sarah YOUNG	
For: DISPLAY DEVICE	Art Unit: 2629
Filed: July 31, 2003	
Serial No.: 10/632,348	

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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

SIR:

On August 28, 2008, Appellant filed a Notice of Appeal from the last decision of the Examiner contained in the Final Office Action dated June 2, 2008 in the above-identified patent application.

In accordance with 37 C.F.R. § 41.37, this brief is submitted in support of the appeal of the rejections of claims 1 and 6 to 25. For at least the reasons set forth below, the rejections of claims 1 and 6 to 25 should be reversed.

1. REAL PARTIES IN INTEREST

The real parties in interest in the present appeal are VOLKSWAGEN AG of Wolfsburg, Federal Republic of Germany, and AUDI AG of Ingolstadt, Federal Republic of Germany, which are the assignees of the entire right, title and interest in and to the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to

Appellant or the assignees, VOLKSWAGEN AG and AUDI AG, "which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal."

3. STATUS OF CLAIMS

Claims 1 and 6 to 25 are pending.

Claims 2 to 5 and 26 have been canceled.

Claims 1, 6 to 13, and 15 to 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of PCT International Patent Application Publication No. WO 02/27645 ("Franzen"), "Hyper-Redundant Robot Manipulators Actuated by Optimized Binary Dielectric Polymers" ("Wingert et al."), and U.S. Patent No. 6,373,472 ("Palalau et al.").

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Franzen, Wingert et al., Palalau et al., and U.S. Patent Application Publication No. 2004/0017362 ("Mulligan et al.").

A copy of the appealed claims, *i.e.*, claims 1 and 6 to 25, is attached hereto in the Claims Appendix.

4. STATUS OF AMENDMENTS

In response to the Final Office Action dated June 2, 2008, Appellant filed a "Reply Under 37 C.F.R. § 1.116" ("the Reply") on August 4, 2008. No proposed amendments to the claims were included in the Reply. It is Appellant's understanding that the claims as included in the annexed "Claims Appendix" reflect the current claims.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The present claims on appeal include four independent claims, *i.e.*, claims 1 and 20 to 22.

Independent claim 1 relates to a display device. Claim 1 recites that the display device includes a display 21, 31. *Specification* at page 5, line 18 and line 26; *e.g.*, Figures 3 to 5. Claim 1 recites that the display device includes an actuator layer 22, 32 arranged on an outwardly facing side of the display 21, 31. *Specification* at page 5, lines 18 to 19 and 26 to 27; *e.g.*, Figures 3 to 5. Claim 1 recites that the actuator layer 22, 32 includes (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a)

a computation device and (b) a logic circuit. *Specification* at page 5, lines 19 to 22 and lines 27 to 30; *e.g.*, Figures 3 to 5. Claim 1 recites that the display 21, 22 is configured to display information relevant to operation of a motor vehicle. *Specification* at page 2, lines 33 to 36.

Independent claim 20 relates to a steering wheel. Claim 20 recites that the steering wheel 12 includes a display device 14 arranged on the steering wheel 14. *Specification* at page 5, lines 9 to 14; *e.g.*, Figure 2. Claim 20 recites that display device 14 includes a display 21, 31 and an actuator layer 22, 32 arranged on an outwardly facing side of the display 21, 31. *Specification* at page 5, lines 18 to 19 and 26 to 27; *e.g.*, Figures 3 to 5. Claim 20 recites that the actuator layer 22, 32 includes (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit. *Specification* at page 5, lines 19 to 22 and lines 27 to 30; *e.g.*, Figures 3 to 5.

Independent claim 21 relates to a passenger compartment of a motor vehicle. Claim 21 recites that the passenger compartment 1, 11 includes a display device 4, 14 arranged within the passenger compartment 1, 11. *Specification* at page 5, lines 5 to 14; *e.g.*, Figures 1 and 2. Claim 21 recites that the display device 4, 14 includes a display 21, 31 and an actuator layer 22, 32 arranged on an outwardly facing side of the display 21, 31. *Specification* at page 5, lines 18 to 19 and 26 to 27; *e.g.*, Figures 3 to 5. Claim 21 recites that the actuator layer 22, 32 includes (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit. *Specification* at page 5, lines 19 to 22 and lines 27 to 30; *e.g.*, Figures 3 to 5.

Independent claim 22 relates to a motor vehicle. Claim 22 recites that the motor vehicle includes a display device 4, 14 arranged within the motor vehicle. *Specification* at page 5, lines 5 to 14; *e.g.*, Figures 1 and 2. Claim 22 recites that the display device 4, 14, includes a display 21, 31 and an actuator layer 22, 32 arranged on an outwardly facing side of the display 21, 31. *Specification* at page 5, lines 18 to 19 and 26 to 27; *e.g.*, Figures 3 to 5. Claim 22 recites that the actuator layer 22, 32 includes (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a control circuit. *Specification* at page 5, lines 19 to 22 and lines 27 to 30; *e.g.*, Figures 3 to 5.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1, 6 to 13, and 15 to 25 are patentable over the combination of Franzen, Wingert et al., and Palalau et al.

B. Whether claim 14 is patentable over the combination of Franzen, Wingert et al., Palalau et al., and Mulligan et al.

7. ARGUMENTS

A. Claims 1, 6 to 13, and 15 to 25

Claims 1, 6 to 13, and 15 to 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Franzen, Wingert et al., and Palalau et al. It is respectfully submitted that the combination of Franzen, Wingert et al., and Palalau et al. does not render unpatentable the present claims for at least the following reasons.

Claim 1 relates to a display device and recites that the display device includes a display and ***an actuator layer arranged on an outwardly facing side of the display***. Claim 1 further recites that the actuator layer includes (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit. According to claim 1, the display is configured to display information relevant to operation of a motor vehicle.

The Final Office Action appears to suggest modifying the device of Franzen to include an actuator layer on an outer surface of the display. In particular, the Final Office Action appears to contend that it would have been obvious to use an actuator material disclosed by Wingert et al. in the transparent sensor layer S1 of Franzen. Appellant respectfully disagrees.

According to Franzen, the transparent layer S1 is disposed above the display layer S2. See Figure. The actuator of Wingert et al. is disclosed as including an elastomeric film coated on both sides with electrodes. See, e.g., Figure 2. Referring to Wingert et al., there is no indication whatsoever that either of the elastomeric film and the electrode coating is transparent. Absent transparency, the proposed modification would ***render the device of Franzen unfit for its intended purpose***, as the display layer S2 would not be visible through the layer S1. As such, the proposed combination would not form a sufficient basis for a prima facie case of obviousness. See M.P.E.P. § 2143.01(V). Further, Franzen discloses that the transparent sensor layer S1 "is configured in such a way that the touch is detected and at least one first signal is generated, which determines at least the location (Cartesian

coordinates) of the touch." English translation of Franzen, page 8. There is no indication whatsoever that forming the sensor layer of the materials and structure disclosed by Wingert et al. would allow touch detection.

Moreover, the device of Franzen provides a flexible display layer S2 and a flexible, transparent sensor layer S1, both of which are disposed over a third layer S3 that includes piezoelectrically actuated knobs that "punctiformly mechanically manipulate the first two layers S1 and S2." English translation of Franzen, page 10. Rather than having the display and sensor layers S1 and S2 manipulated by the actuator of the third layer, the modification suggested by the Final Office Action would result in a sensor layer that is self-actuating. Thus, the proposed modification would ***change the principle of operation*** of the reference, and is therefore an insufficient basis for a prima facie case of obviousness. See M.P.E.P. § 2143.01(VI).

Furthermore, the Office Action has not established a *prima facie* case of obviousness as required under *KSR International Co. v. Teleflex Inc.*, 550 U.S. __, 82 U.S.P.Q.2d 1385 (2007) or in compliance with the "Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103," M.P.E.P. § 2141 ("the Guidelines"). In this regard, as set forth in the Guidelines, the key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of reasons why the claimed subject matter would have been obvious, and rejections for want of obviousness cannot be sustained by mere conclusory statements. Rather, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Among the rationales enumerated in the Guidelines and at M.P.E.P. § 2143 are: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of known technique to improve similar devices (methods, or products) in the same way; (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (e) "obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *See also*, *KSR*, 550 U.S. at __, 82 U.S.P.Q.2d at 1395 to 97.

The present rejection appears to be relying on a teaching, suggestion or motivation rationale. However, to reject a claim based on this rationale, M.P.E.P. § 2143(G) states that the Examiner ***must*** articulate: (1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) a finding that there was reasonable expectation of success; and (3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness. *See also*, *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360, 80 U.S.P.Q.2d 1641, 1645 (Fed. Cir. 2006) ("We thus consider whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so.").

Regarding the finding that there was some teaching, suggestion, or motivation to modify or combine the references, the Final Office Action states that:

> it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the actuator of Franzen to have the material of as taught by Wingert so as to achieve improved performance by incorporating an elastic passive element to maintain uniform force-displacement characteristic and bi-stable action.

Final Office Action, page 3, lines 2 to 6 (internal quotation marks omitted). It is noted, however, that the "actuator" of Franzen would appear to be the piezoelectrically actuated knob matrix if the third layer S3 -- ***not*** the transparent sensor layer S1. In this regard, the Final Office Action has not articulated a finding that there is some teaching, suggestion, or motivation to incorporate the actuator of Wingert et al. into the transparent sensor layer S1, ***rather than the third layer S3***. Further, the Final Office Action fails to articulate a finding that there was reasonable expectation of success in forming the transparent sensor layer of Franzen from the electrode coated elastomeric film of Winger et al. Thus, it is respectfully submitted that the Final Office Action has failed to establish a *prima facie* case of obviousness for these additional reasons.

Palalau et al. does not cure the aforementioned deficiencies of the present rejection.

In view of the foregoing, it is respectfully submitted that the combination of Franzen, Wingert et al., and Palalau et al. does not disclose, or even suggest, an actuator layer

arranged on an outwardly facing side of a display and including (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit, as recited in claim 1. As such, it is respectfully submitted that the combination of Franzen, Wingert et al., and Palalau et al. does not disclose or suggest all of the features recited in claim 1 and thus does not render unpatentable claim 1.

As for claims 6 to 13, 15 to 19 and 23 to 25, which ultimately depend from claim 1 and therefore include all of the features recited in claim 1, it is respectfully submitted that the combination of Franzen, Wingert et al., and Palalau et al. does not render unpatentable these dependent claims for at least the same reasons more fully set forth above in support of the patentability of claim 1.

Regarding claims 20 to 22, these claims include features analogous to the features included in claim 1. Accordingly, it is respectfully submitted that the combination of Franzen, Wingert et al., and Palalau et al. does not render unpatentable claims 20 to 22 for at least the same reasons more fully set forth above.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

B. Claim 14

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Franzen, Wingert et al., Palalau et al., and Mulligan et al. It is respectfully submitted that the combination of Franzen, Wingert et al., Palalau et al., and Mulligan et al. does not render unpatentable claim 14 for at least the following reasons.

Claim 14 depends from claim 1 and therefore includes all of the features recited in claim 1. As more fully set forth above, the combination of Franzen, Wingert et al., and Palalau et al. does not disclose or even suggest all of the features recited in claim 1, and the combination of Franzen, Wingert et al., and Palalau et al. does not render unpatentable claim 1, from which claim 14 depends. Mulligan et al. does not disclose or suggest the features of claim 1 not disclosed or suggested by the combination of Franzen, Wingert et al., and Palalau et al. and does not otherwise cure the critical deficiencies with respect to the combination of Franzen, Wingert et al., and Palalau et al. noted above.

In view of the foregoing, it is respectfully submitted that the combination of Franzen, Wingert et al., Palalau et al., and Mulligan et al. does not disclose, or even suggest, all of the features of claim 14. As such, it is respectfully submitted that the combination of

Franzen, Wingert et al., Palalau et al., and Mulligan et al. does not render unpatentable claim 14.

In view of all of the foregoing, reversal of this rejection is respectfully submitted.

8. CLAIMS APPENDIX

A "Claims Appendix" is attached hereto and appears on the three (3) pages numbered "Claims Appendix 1" to "Claims Appendix 3."

9. EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellant in the appeal. An "Evidence Appendix" is nevertheless attached hereto and appears on the one (1) page numbered "Evidence Appendix."

10. RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2, above, "[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellant or the assignees, VOLKSWAGEN AG and AUDI AG, 'which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.'" As such, there no "decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]" to be submitted. A "Related Proceedings Appendix" is nevertheless attached hereto and appears on the one (1) page numbered "Related Proceedings Appendix."

11. CONCLUSION

For at least the reasons indicated above, Appellant respectfully submitsthat the art of record does not disclose or suggest the subject matter as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the subject matter as set forth in the claims of the present application is patentable.

In view of all of the foregoing, reversal of the rejections set forth in the Final Office Action is therefore respectfully requested.

Respectfully submitted,

Dated: March 27, 2009

By: /Clifford A. Ulrich/
Clifford A. Ulrich
Reg. No. 42,194

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

CLAIMS APPENDIX

1. A display device, comprising:

a display; and

an actuator layer arranged on an outwardly facing side of the display and including (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit;

wherein the display is configured to display information relevant to operation of a motor vehicle.

6. The display device according to claim 1, wherein the actuator layer is transparent.

7. The display device according to claim 1, wherein the control signal includes an optical signal.

8. The display device according to claim 1, wherein the control signal includes light.

9. The display device according to claim 1, wherein the control signal includes an electrical field.

10. The display device according to claim 1, wherein the control signal includes an electromagnetic field.

11. The display device according to claim 1, wherein the actuator layer is statically deformable at least for a duration of the control signal.

12. The display device according to claim 1, wherein the display is configured to receive entry of user input.

13. The display device according to claim 12, wherein an area of the actuator layer is configured to receive the entry of the user input.

14. The display device according to claim 1, wherein the actuator layer includes a sol gel.

15. The display device according to claim 1, wherein the actuator layer is controllable by haptic feedback.

16. The display device according to claim 1, wherein the actuator layer is deformable by pressure with a force that exceeds a limiting value.

17. The display device according to claim 12, further comprising a computation device configured to deform the actuator layer in accordance with the control signal at a point of contact of the actuator layer touched by the user.

18. The display device according to claim 17, wherein the computation device is configured to deform the actuator layer at the point of contact only in response to an input via the display by the user by touch at the point of contact.

19. The display device according to claim 1, wherein the actuator layer is configured to produce an operating element.

20. A steering wheel, comprising:

a display device arranged on the steering wheel, the display device including a display and an actuator layer arranged on an outwardly facing side of the display, the actuator layer including (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit.

21. A passenger compartment of a motor vehicle, comprising:

a display device arranged within the passenger compartment, the display device including a display and an actuator layer arranged on an outwardly facing side of the display, the actuator layer including (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit.

22. A motor vehicle, comprising:

a display device arranged within the motor vehicle, the display device including a display and an actuator layer arranged on an outwardly facing side of the display, the actuator layer including (a) a material having a reversibly and controllably changeable volume and (b) an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a control circuit.

23. The display device according to claim 1, wherein the operating surface geometry is deformable in response to the control signal.

24. The display device according to claim 1, further comprising the computation device configured to generate the control signal, the operative surface geometry deformable in response to the control signal generated by the computation device.

25. The display device according to claim 1, wherein the operating surface geometry is deformable in response to an electronic control signal.

EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§1.130, 1.131, or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellant in the appeal.

RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2 of this Appeal Brief, "[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellant or the assignees, VOLKSWAGEN AG and AUDI AG, 'which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.'" As such, there no "decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]" to be submitted.